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REMARKS

Claims 64-68, 70-80, 83-92, 94, and 95 are pending. Claims 64 and 95 are amended herein. No new matter has been added by virtue of the amendments, support therefore being found throughout the originally filed claims and specification (e.g. see page 13, lines 7-13; page 14, lines 23-28)

1. 35 U.S.C. §103 Rejections

Claims 64-68, 70-80, and 83-92, 94, and 95 are rejected under 35 U.S.C. §103(a) over Singhvi et al (6,368,838 B1) in view of Dewez et al (WO 96/15223) and Anderson et al (6,686,184 B1).

Applicants respectfully traverse.

Applicants' independent claim 64 recites a device for adhering a biomolecule in a predetermined position comprising a substrate comprising a polymeric surface and having thereon a plurality of cytophilic regions that can adhere a biomolecule and cytophobic regions to which the biomolecules do not adhere, wherein the cytophobic regions are contiguous with the cytophilic regions. The cytophobic regions are formed of one or more surfactant compounds adsorbed on the polymeric surface. The device further comprises microfluidic channels on the polymeric surface.

Applicants' independent claim 95 recites a device for adhering a biomolecule in a predetermined position comprising a substrate comprising a polymeric surface and having thereon a plurality of cytophilic regions that can adhere a biomolecule and cytophobic regions to which the biomolecules do not adhere, wherein cytophobic regions are contiguous with the cytophilic regions, wherein the cytophobic regions are formed of one or more surfactant compounds adsorbed on the polymeric surface, wherein the surfactant compound is not covalently linked to the substrate.

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The Office asserts that it "would have been obvious to provide the cytophilic islands of the device of Singhvi et al with extracellular matrix protein to enhance the bonding of cells as suggested by Singhvi et al and Dewez et al." The Office further asserts that it "would have been obvious to provide the cytophobic regions of Singhvi et al with a surfactant to inhibit binding of extracellular matrix protein to these regions as suggested by Dewez et al." The Office further asserts that it "would have been obvious to provide the device of Singhvi et al with microfluidic channels to obtain the function of these channels in patterning a surface as disclosed by Anderson et al."

Applicants respectfully submit that Singhvi at least fails to teach or suggest cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface and microfluidic channels on the polymeric surface.

Singhvi describes a plate having one or more cytophilic islands on its surface isolated by cytophobic regions. These cytophilic and cytophobic regions are created by SAMs. Singhvi does not disclose or suggest the use of surfactants to create cytophobic regions. Rather, Singhvi is directed towards creating cytophobic and cytophilic regions using SAMs.

Providing the cytophobic regions of Singhvi (which are formed by SAMs) with surfactant, as proposed by the Office, would result in a surface having cytophobic regions (formed by SAMs) having surfactant provided thereon, which is not in accordance with Applicants' claims.

Dewez does not remedy these deficiencies. Dewez describes the use of plasma treatment to modify a substrate surface. Thereafter, the plasma modified surface is provided with cytophobic and cytophilic regions. Dewez does not teach or suggest cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface. This teaching comes purely from Applicants' disclosure. Further, like Singhvi, Dewez fails to teach or suggest microfluidic channels on the polymeric surface.

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Thus, Dewez, in combination with Singhvi still fail to teach or suggest cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface and microfluidic channels on the polymeric surface.

Applicants further disagree with the Office's assertion that "it would have further been obvious to provide the device of Singhvi et al with microfluidic channels to obtain the function of these channels in patterning a surface as disclosed by Anderson et al."

While Anderson describes patterning surfaces using microfluidic stamps, Anderson, Singhvi, and Dewez at least fail to teach or suggest a combination of cytophilic regions, cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface, and microfluidic channels. Applicants respectfully submit that this combination is solely taught by Applicants and such a combination is made using hindsight reasoning.

Anderson, Singhvi, and Dewez teach three different methods for providing cytophobic and cytophilic regions on surfaces. These three different methods, individually, achieve the goal of providing a surface with cytophobic and cytophilic regions. It is well-established that even when combination of references teach every element of the claimed invention, if there is no motivation to combine, a rejection based on a *prima facie* case of obviousness is improper. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998). Further, the level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

In this case, there is no motivation to combine the references to provide a combination of cytophobic regions contiguous with cytophilic regions and microfluidic channels. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). In this case, there is no suggestion of the desirability of the combination proposed by the Office other than that the references can be combined.

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Accordingly, it is respectfully submitted that claim 64 is patentable over Singhvi, Dewez, and Anderson. Claims 65-68, 70-80 and 83-94 depend from claim 64 and, likewise, are patentable over Singhvi, Dewez, and Anderson. Reconsideration and withdrawal of the rejection is respectfully requested.

With respect to claim 95, Applicants respectfully submit that Singhvi, Dewez, and Anderson at least fail to teach or suggest cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface, wherein the surfactant compound is not covalently linked to the substrate.

As set forth above, Singhvi at least fails to teach or suggest cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface. Further, there is no teaching or suggestion in Singhvi that one or more surfactant compounds can be adsorbed on the polymeric surface such that the surfactant compound is not covalently linked. This teaching comes purely from Applicants' disclosure.

Dewez does not remedy these deficiencies. Dewez describes the use of plasma treatment to modify a substrate surface. Thereafter, the plasma modified surface is provided with cytophobic and cytophilic regions. Dewez does not teach or suggest cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface or that these surfactant compounds can be adsorbed on the polymeric surface such that the surfactant compound is not covalently linked. This teaching comes purely from Applicants' disclosure.

Anderson further fails to teach or suggest cytophobic regions formed of one or more surfactant compounds adsorbed on the polymeric surface or that these surfactant compounds can be adsorbed on the polymeric surface such that the surfactant compound is not covalently linked. This teaching comes purely from Applicants' disclosure.

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In view thereof, no combination of Singhvi, Dewez, and Anderson teach or suggest a polymeric surface having cytophobic regions contiguous with cytophilic regions, wherein the cytophobic regions comprise one or more surfactant compounds adsorbed on the polymeric surface, and wherein the surfactant compounds are not covalently linked to the substrate.

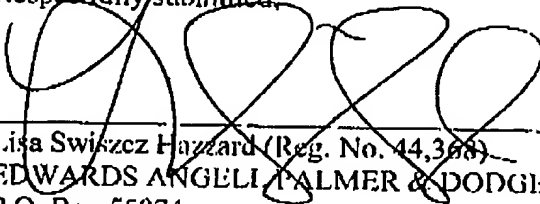
Accordingly, claim 95 is patentable over Singhvi, Dewez, and Anderson.
Reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the foregoing, applicants request reconsideration and allowance of claims 64-68, 70-80 and 83-95.

It is believed that no fees are required for consideration of this response. However, if for any reason the fee paid is inadequate or credit is owed for any excess fee paid, the Office is hereby authorized and requested to charge Deposit Account No. 04-1105.

Respectfully submitted,



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